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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/573,953

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Haibin Huang

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EXAMINER

MAI, TAN V

ART UNIT

PAPER NUMBER

2193

MAIL DATE

DELIVERY MODE

05/19/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,953	HUANG ET AL.	
	Examiner	Art Unit	
	TAN MAI	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 May 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/6/11 & 6/28/06</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: claim 14 recites "computer readable medium". Therefore, the question becomes whether non-statutory embodiments would be fairly conveyed to one of ordinary skill given the terminology utilized. In the instant, it would appear to be reasonable to interpret media for "carrying" as fairly conveying signals and other forms of propagation or transmission media to one of ordinary skill.

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-8 and 14-16 are rejected under 101 for being non-statutory as not being properly classified under one of the statutory category of inventions.

In order for a process claim to be considered statutory, the process claim **must first** be either 1) structurally tied to another statutory class (such as a **particular apparatus**) or 2) transform underlying subject matter to a different state or thing (*In re Bilski*). Claim 1 detail steps of performing a domain transformation of a digital signal. **None of the cited steps are structurally tied to another statutory class (such as a particular apparatus).** The dependent claims [2-8 & 15-16] add nothing to solve this problem and therefore are non- statutory also. Thus, claims 1-8 and 15-16 are not directed to a statutory process. Claim 14 is rejected under 101 for being non- statutory as not fitting one of the statutory category of inventions and being directed to software per se. See explanation in paragraph No. 1 above.

Also see the two-prong test recently set forth in *Ex parte Gutta*, 93 USPQ2d 1025, 1026-27 (BPAI 2009) (precedential)*:

(1) Is the claim limited to a tangible practical application, in which the mathematical algorithm is applied, that results in a real-world use (e.g., "not a mere field-of-use label having no significance")?

(2) Is the claim limited so as to not encompass substantially all practical applications of the mathematical algorithm either "in all fields" of use of the algorithm or even in "only one field?"

If the machine (or article of manufacture) claim fails either prong of the two-part inquiry, then the claim is not directed to patent eligible subject matter.

* Also available at:

<http://www.uspto.gov/ip/boards/bpai/decisions/prec/fd084366.pdf>

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 8-9, 14-16 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Geiger et al (Applicants' admission prior art, "Audio Coding ...").

As per independent claim 1, Geiger et al disclose the claimed method for performing a domain transformation of a digital signal from the time domain into the frequency domain and vice versa (e.g., see col. 2 of page 2, forward and inverse MDCT), the method comprising:

performing the transformation by a transforming element comprising a plurality of lifting stages (e.g., section THE LIFTING SCHEME, three lifting steps & rounding function), wherein the transformation corresponds to a transformation matrix and wherein at least one lifting stage of the plurality of lifting stages comprises at least one auxiliary transformation matrix and a rounding unit, the auxiliary transformation matrix comprising the transformation matrix itself or the corresponding transformation matrix of lower dimension; and

performing a rounding operation of the signal by the rounding unit after the transformation by the auxiliary transformation matrix.

As per dependent claim 2, Geiger et al. further disclose the transformation is a DCT-I transformation, DCT-IV transformation (e.g. section "MDCT by DCT-IV and Givens Rotations" in pages 2-3), DST-I transformation, DFT-I transformation, a DFT-IV transformation, DST-IV transformation, DWT-I transformation or DWT-IV transformation.

As per dependent claim 3, Geiger et al. further disclose each lifting stage corresponds to a lifting matrix, wherein the lifting matrix is a block-triangular matrix comprising four sub-matrices with two invertible integer matrices as two of the sub-matrices in one diagonal(e.g., section THE LIFTING SCHEME in page 4).

As per dependent claim 4, Geiger et al. further disclose the invertible integer matrices in each lifting matrix are diagonal matrices with components which are either one or minus one (e.g., section THE LIFTING SCHEME in page 4).

As per dependent claim 5, Geiger et al. further disclose the transforming element comprises three lifting stages (three lifting steps).

As per dependent claim 8, Geiger et al. further disclose the audio signal or a video signal is used as the digital signal (e.g. abstract).

As per dependent claims 15-16, Geiger et al. further disclose the claimed features (e.g., section THE LIFTING SCHEME in page 4).

Due to the similarity of claims 9 & 14 to claim 1, they are rejected under a similar rationale.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 and 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geiger et al.

Geiger et al have been discussed in paragraph No. 3 above.

As per dependent claims 6-8, the claims further add the numbers of lifting stages. The features are obvious to a person having ordinary skill in the art.

As per dependent claims 10-13, the claims further add the detail of transformation unit. The features are old and well known in the art. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to design the claimed invention according to Geiger et al's teachings because the device comprises a plurality of blocks and include a plurality of lifting stages as claimed.

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Cited references are art of interest.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan V. Mai whose telephone number is (571) 272-3726. The examiner can normally be reached on Mon-Wed and Fri from 9:30am to 2:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis Bullock, Jr., can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is:

Official (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

/Tan V Mai/
Primary Examiner, Art Unit 2193

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